FlyBy Math™ Alignment
Minnesota Academic Standards
Mathematics

Strand I. MATHEMATICAL REASONING

Standard: *Apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands.*

Benchmarks	***FlyBy Math*™ Activities**
1. Assess the reasonableness of a solution by comparing the solution to appropriate graphical or numerical estimates or by recognizing the feasibility of a solution in a given context.	--Predict outcomes and explain results of mathematical models and experiments.
2. Appropriately use examples and counterexamples to make and test conjectures, justify solutions and explain results.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Predict outcomes and explain results of mathematical models and experiments.
3. Translate a problem described verbally or by tables, diagrams or graphs, into suitable mathematical language, solve the problem mathematically and interpret the result in the original context.	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.
4. Support mathematical results by explaining why the steps in a solution are valid and why a particular solution method is appropriate.	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Strand III. PATTERNS, FUNCTIONS AND ALGEBRA

Sub-Strand A. Patterns and Functions

Standard: Demonstrate an understanding of rate of change graphically and numerically.

Benchmarks	***FlyBy Math*™ Activities**
1. Demonstrate, numerically and graphically, an understanding that rate is a measure of change of one quantity per unit change of another quantity in real-world and mathematical problems.	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Interpret the slope of a line in the context of a distance-rate-time problem.

2. Plot points on the graph of a linear function and identify the slope or rate of change.	--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes. --Interpret the slope of a line in the context of a distance-rate-time problem.
Sub-Strand B. Algebra (Algebraic Thinking)	
Standard: *Apply arithmetic operations in the correct order to simplify and evaluate numeric expressions in real-world and mathematical problems.*	
Benchmarks	***FlyBy Math™*** **Activities**
3. Solve simple formulas with up to three variables, when the values of two of the variables are given.	--Use the distance-rate-time formula to predict and analyze aircraft conflicts.

Strand V. SPATIAL SENSE, GEOMETRY AND MEASUREMENT	
Sub-Strand B. Geometry	
Standard: *Use basic geometric principles and proportional reasoning to solve real-world and mathematical problems.*	
Benchmarks	***FlyBy Math™*** **Activities**
3. Use ratios and proportions to interpret map scales and scale drawings.	--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes.
Sub-Strand C. Measurement	
Standard: *Make calculations of time, length, area and volume within standard measuring systems, using good judgment in choice of units.*	
Benchmarks	***FlyBy Math™*** **Activities**
1. Choose appropriate units to calculate, measure, and record length, weight, area and volume in both U.S. customary and metric systems.	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.